

CLAIM AMENDMENTS

1 1. (Currently amended) Method A method for implementing
2 internetworking of a set of Content Delivery Networks ~~[[or]]~~ CDN
3 (CDN1, CDN2), the networks in said set being provided with
4 respective caches, respective Directory Name Service or Domain Name
5 Servers (DNS) and respective content distribution systems to
6 respective clients, as well as interface components (CIG)
7 susceptible of being each associated to a respective network (CDN1)
8 in said set of networks and co-operating with at least one similar
9 interface component (CIG) associated to another network (CDN2) in
10 said set of networks, the method comprising the step of

11 ~~[[-]] collecting in said interface components (CIG)~~
12 routing data related to the association of said contents and the
13 caches which contain them; ~~[[,]] and being characterised in that it~~
14 ~~comprises the steps of~~

15 ~~[[-]] transferring (DNSI) said routing data from at least~~
16 one of said interface components (CIG) to the Directory Name
17 Service or Domain Name Server (DNS) of the respective network,
18 whereby access by the client of said respective network of contents
19 of the networks in said set of CDN (CDN1, CDN2) is implemented
20 through the Directory Name Service or Domain Name Server (DNS) of
21 said network.

1 2. (Currently amended) Method The method according to
2 claim 1 wherein , ~~characterised in that~~ the following steps are
3 performed by at least one of said interface components (CIG):

4 [[-]] to receive data on the state of the cache and/or
5 the contents of the respective network,

6 [[-]] to determine whether said contents require an
7 updating or not, and

8 [[-]] to manage said updating by performing at least one
9 step in the following group comprising:

10 [[-]] editing the respective database,

11 [[-]] editing the respective Directory Name Service
12 tables, editing the respective log file archive, and

13 [[-]] forwarding an update request message to said at
14 least one similar component.

1 3. (Currently amended) Method The method according to
2 claim ~~1 or claim 2~~, ~~characterised in that~~ 2 wherein said interface
3 components (CIG) communicate via a CNAP protocol.

1 4. (Currently amended) System A system comprising a set
2 of internetworked Content Delivery Networks [[or]] CDN (CDN1, CDN2)
3 ~~type networks~~, the networks in said set being provided with
4 respective caches, respective Directory Name Service or Domain Name
5 Server (DNS) and respective content distribution systems to

6 respective clients, as well as interface components (CIG)
7 susceptible of being each associated to a respective network (CDN1)
8 in said set of networks and co-operating with at least one similar
9 interface component associated to another network (CDN2) in said
10 set of networks, said interface components (CIG) being configured
11 to collect routing data related to the association of said contents
12 and the caches which contain them, ~~the system being characterised~~
13 ~~in that~~ at least one of said interface components (CIG) ~~[[is]]~~ being
14 configured to transfer (DNSI) said routing data to the Directory
15 Name Service or Domain Name Server (DNS) of the respective network,
16 so that access by the client of said respective network to the
17 contents of the networks in said set of CDN (CDN1, CDN2) is
18 implemented through the Directory Name Service or Domain Name
19 Server (DNS) of said network.

1 5. (Currently amended) ~~System~~ The system according to
2 claim 4 wherein ~~, characterised in that~~ at least one of said
3 interface components (CIG) comprises:

4 ~~[[-]]~~ a module for receiving data on the state of the
5 cache and/or the contents of the respective network,

6 ~~[[-]]~~ a module for determining whether said contents
7 require an updating or not, and

8 ~~[[-]]~~ a module for managing said updating by performing
9 at least one step in the following group comprising:

10 [[-]] editing the respective database,
11 [[-]] editing the respective Directory Name Service
12 tables,
13 [[-]] editing the respective log file archive, and
14 [[-]] forwarding an update request message to said at
15 least one similar component.

1 6. (Currently amended) ~~System~~ The system according to
2 ~~claim 4 or claim 5, characterised in that~~ wherein said interface
3 components (CIG) communicate via a CNAP protocol.

1 7. (Currently amended) ~~Interface~~ The interface component
2 (CIG) for implementing Content Delivery Network ~~[[or]]~~ CDN (CDN1,
3 CDN2) internetworking, the networks (CDN1, CDN2) being comprised in
4 a set and being provided with respective caches, respective
5 Directory Name Service or Domain Name Servers (DNS) and respective
6 content distribution systems to respective clients, said interface
7 component (CIG) being susceptible of being associated to a
8 respective network (CDN1) in said set of networks and co-operating
9 with at least one similar interface component associated to another
10 network (CDN2) in said set of networks, said interface component
11 (CIG) being configured to collect routing data related to the
12 association of said contents and the caches which contain them,

13 said interface component (CIG) comprising and characterised in that
14 it comprises:

15 [[-]] at least a first interface module (RRI) for
16 exchanging data with said at least one similar component,

17 [[-]] a second interface module (DNSI) for interfacing
18 with the Directory Name Service (DNS) of the respective network,
19 and

20 [[-]] a core (RRP) for collecting and processing the data
21 received by the component and routing the respective requests,
22 whereby said interface component (CIG) is susceptible of
23 transferring said routing data to the directory name Service or
24 Domain Name Server (DNS) of the respective network via said second
25 interface module (DNSI).

1 8. (Currently amended) Interface The interface component
2 according to claim 7, ~~characterised in that it is configured to be~~
3 controlled by a monitoring system and comprises:

4 [[-]] a third interface module (DII) for retrieving data
5 on the availability of contents from the content distribution
6 system on the respective network, and

7 [[-]] a fourth interface module (MII) for interacting
8 with said monitoring system.

1 9. (Currently amended) Interface The interface component
2 according to claim 7 wherein ~~or claim 8, characterised in that~~ said
3 core (RRP) comprises:

4 [[-]] a module for receiving data from said interface
5 modules (RRI, DNSI, DII, MII) and extracting data on the status of
6 the caches and/or of the contents of the respective network
7 therefrom, a module for determining whether said contents require
8 an updating or not, and

9 [[-]] a module for managing the updating by performing at
10 least one step in the following group comprising:

11 [[-]] editing the respective database,
12 [[-]] editing the respective Directory Name Service
13 tables,
14 [[-]] editing the respective log file archive, and
15 [[-]] forwarding an update request message to said at
16 least one similar interface component.

1 10. (Currently amended) Interface The interface
2 component according to ~~any of the claims from 7 to 9, characterised~~
3 ~~in that~~ claim 9 said at least a first interface module (RRI) is
4 configured to communicate with a first interface module of said at
5 least one similar component via CNAP protocol.

1 11. (Currently amended) ~~Interface~~ The interface
2 component according to claim 10, ~~characterised in that wherein~~ said
3 at least a first interface module (RRI) is configured to translate
4 from said CNAP protocol to a format which can be understood by a
5 core (RRP) of said at least one similar interface component.

1 12. (Currently amended) ~~Interface~~ The interface
2 component according to ~~any of the claims from 7 to 11,~~
3 ~~characterised in that~~ claim 11 said communication between said
4 first interface module (RRI) and a first interface module (RRI) of
5 said at least one similar interface component comprises the
6 transmission of signals indicating quantities from the following
7 group comprising:

8 [[-]] ID of the network in which said interface component
9 is associated,

10 [[-]] IP address of the computer hosting the local
11 interface component,

12 [[-]] IDs of interconnected systems via said interface
13 component and said at least one similar interface component,

14 [[-]] IP addresses of the remote interface components of
15 said internetworking systems,

16 [[-]] level of confidences of the internetworking network
17 connection, and

18 [[-]] at least one identification of physical
19 characteristics, such as the geographical distance of the
20 connection between said interfacing component and said similar
21 interface component.

1 13. (Currently amended) Interface The interface
2 component according to ~~any one of the previous claims from 7 to 12,~~
3 ~~characterised in that~~ claim 12 wherein said first interface module
4 (RRI) is configured to exchange information with said at least one
5 similar interface component via an IP transportation protocol such
6 as the TCP protocol.

1 14. (Currently amended) Interface The interface
2 component according to ~~any of the previous claims from 7 to 13,~~
3 ~~characterised in that~~ claim 12 wherein said core (RRP) and said
4 first interface module (RRI) are configured to exchange signals
5 indicating quantities selected from the following group:

6 [[-]] URL identifying the content to which the message
7 refers,

8 [[-]] IP address of the cache which distributes the
9 content,

10 [[-]] ID of the Content Delivery Network to which the
11 cache belongs,

12 [[-]] cache state,

13 [[-]] content state in the cache, and
14 [[-]] life time of routing data.

1 15. (Currently amended) The interface ~~Interface~~
2 component according to claim 8, ~~characterised in that~~ wherein said
3 fourth interface module (MII) is configured to transfer to said
4 core (RRP) signals indicating quantities from the following group
5 comprising:

6 [[-]] IP address of the cache to which the message
7 refers,

8 [[-]] percentage of CPU used by the cache,

9 [[-]] percentage of RAM used by the cache,

10 [[-]] percentage of disc used by the cache,

11 [[-]] percentage of users connected in relation to the
12 maximum capacity of the involved cache service.

1 16. (Currently amended) The interface ~~Interface~~
2 component according to claim 8 ~~or claim 15, characterised in that~~
3 wherein said third interface module (DII) is configured to send to
4 said core (RRP) signals indicating quantities from the following
5 group comprising:

6 [[-]] URL identifying the content to which the message
7 refers,

8 [[-]] list of IP addresses of the caches of said content,

9 [[-]] level of confidence of said content,
10 [[-]] level of availability of said content,
11 [[-]] cache state,
12 [[-]] life time of routing data.

1 17. (Currently amended) The interface Interface
2 component according to claim 16, ~~characterised in that~~ wherein said
3 quantity identifying the level of confidence of the content is
4 susceptible of assuming distinct levels corresponding to at least
5 one first level of confidence in the group comprising:

6 [[-]] a first level of confidence indicating that the
7 contents may be exchanged by all networks in said set of networks,
8 and

9 [[-]] a second level of confidence indicating that the
10 contents may be exchanged on by a selectively determined subset of
11 networks in said set of networks.

1 18. (Currently amended) The interface Interface
2 component according to ~~any one of the previous claims from 7 to 17,~~
3 ~~characterised in that~~ said claim 17 wherein second interface module
4 (DNSI) is configured to communicate with the Directory Name Server
5 (DNS) to update respective tables on the basis of signals
6 indicating quantities from the following group comprising:

7 - ID of the operation to be carried out on the table of
8 said server, such as addition or deletion,
9 [[-]] type of register,
10 [[-]] name of the domain to which the message refers,
11 [[-]] entire URL of the content to which the message
12 refers,
13 [[-]] IP address of the best cache to serve said domain,
14 and
15 [[-]] life time of the register.

1 19. (Currently amended) The interface interface
2 component according to ~~any one of the previous claims from 7 to 18,~~
3 ~~characterised in that~~ claim 18 wherein said core module comprises a
4 memory hosting a data structure containing information on the state
5 of the respective Content Delivery Network and similar
6 internetworking networks.